
भंडारण प्रबंधन कोड

भाग 1 शब्दावली

(पहला पुनरीक्षण)

Storage Management Code

Part 1 Terminology

(First Revision)

ICS 67.060; 01.040.65

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Foodgrains, Allied products and Other Agricultural Produce Sectional Committee had been approved by the Food and Agriculture Divisional Council.

Scientific storage of agricultural commodities demands proper care of different commodities, construction of appropriate type of storage structures suitable for different commodities, hygienic transport, receipt distribution and delivery of these commodities, maintenance of warehouse inspection records, etc. To overcome problems of recurring nature like general and specific care of agricultural commodities, calculation of storage space for various commodities, occupancy of storage structures and calculation of cost of storage and construction, need was felt for developing Indian Standard for storage management of agricultural produce and inputs. In order to have a uniform terminology and to give an authoritative definition of terms frequently used in the storage and marketing structures for agricultural commodities, this standard was first published in 1971. The other two parts in this series are:

Part 2 General care in handling and storage of agricultural produce and inputs;

Part 3 Specific care in handling and storage of agricultural produce and inputs.

In this revision, definition of various terms has been updated and some new definitions have been added. Further, the scope of the standard has been restricted to agricultural produce only and terminologies related to 'agricultural inputs' have been removed.

The Committee responsible for formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

STORAGE MANAGEMENT CODE

PART 1 TERMINOLOGY

(*First Revision*)

1 SCOPE

This code (Part 1) prescribes the definition for various terms most frequently used in storage management.

2 DEFINITIONS

2.1 Aeration — Operation consisting of introducing fresh air into the agricultural produce using a flow rate which is adequate to achieve or maintain levels of temperature and humidity required for satisfactory storage.

2.2 Agricultural Produce — Produce such as cereals, pulses, milled products, oilseeds, sugar, etc.

2.3 Airtight Storage — Storage in a structure which is impermeable to air.

2.4 Alley Way — Free space left around the stacks of bags for operational purposes.

2.5 Ancillary Structures — Structures such as office room, isolation sheds, store room for keeping equipment, pesticides, fumigants, etc.; rooms for watch and ward purposes, built for effective control over the storage premises.

2.6 Angle of Repose (Angle of Internal Friction) — An angle formed with the horizontal plane at which the loose grain when piled will retain its position. The angle varies with commodities and variable factors such as moisture content, particle size, degree of packing etc.

2.7 Bag storage Structure — Structure in which agricultural produce are stored in bags made of cotton, polythene, jute, etc.

2.8 Bulk storage Structures — Structure in which agricultural produce are stored in loose form.

2.9 Bin — Compartment of a silo, large container or an enclosed space intended for storing grain in bulk.

2.10 Bulk Weight — Weight of agricultural produce in kilograms per cubic metre.

2.11 Degassing — Process of freeing a receptacle or structure of pesticidal vapours.

2.12 Delivery — Issue of agricultural produce from a receptacle or structure.

2.13 Disinfestation — Process by which the pests of stored agricultural produce are eliminated or reduced to minimum safe level.

2.14 Drying — Process by which moisture content of agricultural produce is reduced to a safe level for storage.

2.15 Dunnage — Any item or material which can act as a barrier or help in preventing damage due to seepage of moisture and facilitate aeration to the agricultural produce.

2.16 Flat Storage Structures — Bulk storage structure which has its height smaller than other dimensions like width or diameter.

2.17 Fumigation — Process of employment of fumigants for disinfestation.

2.18 Fumigation Covers — Covers made of plastic or rubberized cloth used for covering stacks of agricultural produce for fumigation.

2.19 Gas Mask — Covering of face with appropriate filter for protection against vapors of fumigants.

2.20 Godown (Warehouse) — A structure used for scientific storage of agricultural produce in bags or in bulk.

2.21 Infestation — Live insect and mite species which, during some stage(s) of their life cycle, are capable of causing damage to the grain. It may be classified into the following types:

2.21.1 Clear — If the lot is completely free from living infestation.

2.21.2 Few — If the lot is having upto 2 living minor or major insects per 500 g of sample.

2.21.3 Heavy — If the lot is having more than 2 living minor or major insects per 500 g of sample.

2.22 Hidden Infestation — Those insects which are present within individual grains because either they

are at juvenile stages and have developed from eggs laid inside the grains or they have entered the interior of individual grains through cracks or other damage, usually to feed.

NOTE — Hidden infestation is not normally apparent upon first examination of the sample.

2.23 Loading point — The place from where stocks of agricultural produce are lifted for being loaded in a conveyance.

2.24 Long Term Storage — Storage for such long periods required by large scale trade stockists and government agencies desiring to keep buffer stocks or to maintain food banks. Duration of such storage is more than one year.

2.25 Loss in Storage — Quantitative and qualitative loss of agricultural produce in storage due to damage by pests, moisture or heat.

2.26 Major Insect Pests — Principal storage pests which cause significant damage to a grain.

2.27 Minor Insect Pests — Minor storage pests which do not cause significant damage to the grains.

2.28 Occupancy — Utilization of the capacity of a storage structure expressed in terms of percentage of the total effective storage capacity and reckoned as the average for 12 calendar months.

2.29 Overall — Uniform worn by the workers for disinfection work.

2.30 Net-plinth Area — Net plinth area of a structure actually available for storage of agricultural produce. The area is utilized for calculation of rated capacity of the structure (see 2.33).

2.31 Receipt — Receipt of agricultural produce through trucks, carts, wagons or steamer for storage.

2.32 Rural Storage — Storage at farmer's level.

2.32.1 Indoors Storage — Storage of agricultural commodities inside a house.

2.32.2 Outdoors Storage — Storage of agricultural commodities outside a house.

2.33 Rated Capacity — Net storage capacity of a structure in tonnes deducing alleyways and top space from the total covered plinth area. The capacity varies with height of stack and may be computed by the formula.

2.34 Safe Moisture Level — The moisture level which will not encourage development of micro-organisms and mites.

2.35 Short Term Storage — Storage of agricultural produce as generally practised by cultivators, for a period less than one year.

2.36 Silo — Bulk storage structure consisting of one or more bins which facilitates quick handling of grains.

2.36.1 Storage Block — A portion of the silo used for the storage of agricultural produce.

2.36.2 Head House — A portion of the silo which houses elevator and other accessories such as weighting and cleaning machines for agricultural produce.

2.36.3 Distribution Gallery — The structure on top of bins of a silo for housing system for distribution of agricultural produce into bins.

2.36.4 Marine Tower — A structure located on the quay side for either loading or unloading of agricultural produce into and from ships. This may be stationary or portable.

2.36.5 Collection Gallery — A portion of the silo at or below ground level for housing collection equipment.

2.36.6 Garner — An intermediate hopper for storage of agricultural produce to ensure desired flow for further handling of agricultural produce.

2.36.7 Truck or Wagon Dump — A structure consisting of a series of receiving hoppers where the agricultural produce are dumped by trucks or wagons.

2.37 Stack — A regularly stacked pile of filled up bags or other containers.

2.38 Stack Height — Height of a stack in terms of number of bags from floor. It varies with agricultural produce and conditions.

2.39 Spraying — Process of application of pesticidal sprays for disinfection or prevention of infestation.

2.40 Stored Grain Pests — Pests like insects, mites, rodents, birds micro-organisms, etc, infesting stored agricultural produce.

2.41 Sweepings — Sweepings containing dirt, dust, refractions, etc, and also sound grain collected as a result of either sweeping and round about a storage structure or rail heads or ship boards.

2.42 Temperature Sensing Devices — Devices like thermocouples or electrical resistance thermometers used for measuring temperature of agricultural produce inside a structure.

2.43 Temperature Gradient — Temperature difference between different portions of stored agricultural

produce (especially middle and periphery) or different surfaces of as structure (especially metallic) resulting in moisture condensation in cooler regions.

2.44 Transit Storage — Storage for a short term in which a commodity is practically on the move.

2.45 Unloading Point — The place where agricultural produce are unloaded from a conveyance.

2.46 Ventilation — Process of letting off foul air from a storage structure and letting in fresh air.

2.47 Waterproofing — Process of making a structure waterproof by means of waterproof compounds or by any other means to guard against deterioration of grain due to seepage of ground or rain water inside a structure.

ANNEX A

(Foreword)

LIST OF REFERRED INDIAN STANDARDS

Composition of Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee, FAD 16

<i>Organization</i>	<i>Representative(s)</i>
Directorate of Marketing and Inspection, Ministry of Agriculture, New Delhi	J. S. (MARKETING) AND AGRICULTURAL MARKETING ADVISOR (Chairman)
Centre of Excellence for Soybean Processing, CIAE, Bhopal	DR PUNIT CHANDRA DR S. K. GIRI (<i>Alternate</i>)
All India Food Processors' Association, New Delhi	SHRI SHAM BAGGARRY Ms JYOTI SONI (<i>Alternate</i>)
CSIR-Central Food Technological Research Institute (CFTRI), Mysore	DR M. S. MEERA DR V. B. SASHIKALA
Central Institute of Post-Harvest Engineering & Technology (CIPHET), Ludhiana	HEAD (DIVISION OF TRANSFER OF TECHNOLOGY) DR D. N. YADAV (<i>Alternate</i>)
ICAR-National Rice Research Institute, Cuttack (formerly CRRI)	DR AWADHESH KUMAR DR (MRS) PADMINI SWAIN (<i>Alternate</i>)
ICAR-Central Tuber Crop Research Institute (CTCRI), Thiruvananthapuram	DIRECTOR DR M. S. SANJEEV (<i>Alternate</i>)
Central Warehousing Corporation (CWC), New Delhi	SHRI A. K. MALHOTRA SHRI SIDHARTH RATH (<i>Alternate</i>)
CONCERT, Chennai	SHRI R. SANTHANAM, IAS (RETD.) SHRI G. SANTHANARAJAN (<i>Alternate</i>)
Confederation of Indian Food Trade & Industry (CIFTI)-FICCI, New Delhi	Ms PARNA DASGUPTA Ms PRIYANKA SHARMA (<i>Alternate</i>)
Confederation of Indian Industries (CII), New Delhi	MR MANISH WHORRA MR AROMAL JKOSHI (<i>Alternate</i>)
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Consumer Guidance Society of India, Mumbai	DR SITARAM DIXIT DR M. S. KAMATH (<i>Alternate</i>)
Consumer Research, Education, Action, Training and Empowerment (CREATE)	MR K. SURESH KANNA SH R. PONNAMALAM (<i>Alternate</i>)
Defence Food Research Laboratory (DFRL), Mysore	DR G. K. SHARMA DR A. D. SEMWAL (<i>Alternate</i>)
ICAR - Indian Institute of Maize Research (IIMR), Ludhiana (formerly DMR)	DR R. SAI KUMAR DR DHARAM PAUL CHAUDHARY (<i>Alternate</i>)
Directorate General of Supplies and Transport, Delhi	COL S. C. JOSHI MAJ SONALI DUDHANE (<i>Alternate</i>)
Directorate of Marketing & Inspection, Faridabad	DY AGRICULTURAL MARKETING ADVISOR SMO (STD.) (<i>Alternate</i>)
Directorate of Plant Protection Quarantine & Storage, Faridabad	PLANT PROTECTION ADVISER SHRI R. V. SINGH (<i>Alternate</i>)
Food Corporation of India (FCI), New Delhi	MR A. S. ARUNACHALAM MR SACHIN (<i>Alternate</i>)
Food Safety and Standards Authority of India, New Delhi	Ms APRAJITA VERMA

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In personal capacity	DR S. C. KHURANA
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Indian Grain Storage Management and Research Institute, Hapur	DIRECTOR
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